Peru Program: Potable Water for La Pitajaya

Amanda Li ’16, Corrie Kavanaugh ‘17, Belle Douglas ‘17, Josh Umanky-Castro ‘17, Kasturi Shah ‘16, William Guiracoche ‘17
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We Believe … that international development is a global effort requiring innovation, interdisciplinary collaboration, and cross-cultural understanding.

Our Vision … is a world in which all communities have the capacity to meet their basic needs.

Our Mission … is to implement sustainable, community-driven projects, while creating transformative learning experiences and developing responsible leaders.
Over ten years, we have implemented six projects addressing...

- Sustainable energy
- Health
- Water & sanitation
- Education

Past & Present

- Perú: Samne (2011)
- Perú: Ashaiman (2008)
- Sierra Leone: Kono (2009–2014)
- Dominican Republic: est. 2015
Our Story

- Founded in the fall of 2004, inspired by a student’s summer internship in Peru
- Dedicated to applying students’ education to projects in the developing world
Partnering Community: La Pitajaya, Samne
Project Established in: 2011
Problem: Due to the mining industry in the area, the community’s main source of drinking water, the Rio Moche, is contaminated
2011 :: PROJECT OPENED

• **2011**—EWB-PU opening of new project in Samne, Peru
• **Summer 2011**
  – Pre-assessment trip
  – Discovered polluted state of the Moche River and the need of La Pitajaya residents for clean water
Further assessment of community and the engineering needs for constructing a potable water system there
2012 :: IMPLEMENTATION TRIP

- Implementation of the Alta water system begins
- **Spring box** is constructed
- **1km of the pipeline** is trenched and pipe is laid
- **Reservoir tank foundation** is constructed
- **Education project** in local school in Samne is conducted
- The water system in la Pitajaya Alta is completed
- Potable water flowing through individual tapstands at each house
- Spring box repaired, tank installed, pressure break tank built
- ~3.5 km trenchled
System Layout

Legend
SC – source capture
SB – spring box
R – reservoir
PB – pressure break
TS - tapstand

Conduction line

To Baja
(Future work)
- The water system in la Pitajaya Baja is begun and completed: Spring box, source capture, two tank foundations built, 2 tanks installed, 10 tapstands, ~4 km trenches
- Maintenance work in Alta conducted: 2 houses connected, tank installed, 800m of pipe replaced, repair work on spring box and valveboxes
La Pitajaya Baja

Cross-sectional view of layout of water system for Source B
ALTA REPAIRS

- Repaired and improved source capture
- Replaced 1” pipe with 2” pipe from source capture to spring box
- Built larger springbox to accommodate greater flow during wet season
- Added two shutoff valves to allow for pipeline maintenance
- Added one new tapstand to system
- Galvanized unprotected sections of PVC pipeline
- Added reservoir box to give reliable water access to one user
- Fixed leaks in pipeline
- Repaired tapstands and valve boxes in at individual households
- Previously built source capture in Alta
- Water seeps out of rock outcrop
- Water captured underneath concrete floor, enters pipeline through perforated pipe (not visible)
- Solid concrete – no access point for repairs
ASSESSING STATE OF ALTA SOURCE CAPTURE

- Perforated pipe from original Alta source capture
- Clogged with roots and debris – decreased water flow to system
REPAIRING ALTA SOURCE CAPTURE
Side view of the spring box where the tap is facing us
DISTRIBUTION BOX DESIGN

Top View

3.5" wall

0.5" slipcock
0.5" universal union

0.5" pipe

0.5" adaptors (slip to threaded)

3.75" wall
STORAGE BOX ADDED FOR USER
• Expanded source capture
• Repaired concrete piers that support galvanized sections of pipeline
EXPANDED BAJA SOURCE
CAPTURE DESIGN
NEW COMMUNITIES

• Visited 7 potential communities for our next project
• Met with community leaders to discuss needs
• Most pressing need for these communities is access to potable water
• Investigated potential water sources and pipeline routes
• Took GPS and elevation data to assess technical feasibility of project
FLOW RATE MEASUREMENTS
WHAT I LEARNT :: JOSH
WHAT I LEARNT :: BELLE
WHAT I LEARNT :: CORRIE
WHAT I LEARNT :: KASTURI & AMANDA
GOING FORWARD

- Choosing a new community
- Planning for assessment trip
THANK YOU FOR LISTENING!
DO YOU HAVE ANY QUESTIONS?